Convective overshooting: a possible means to drive g-mode oscillations in γ Dor variables

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With increasing observation data in the past decade, the γ Dor stars now define a new group of pulsating variables, occupying a clear region on the HR diagram that partly superimposed with the instability strip of the δ Scuti stars. However their periods, much longer than that of the δ Scuti stars, reveal that they are g-mode oscillators, and how these g-modes can be excited is still a debating subject. We investigate the possibility that overshooting from the boundaries of convection zone may excite g-mode oscillations. By studying a series of stellar models we found that overshooting cells move by frequencies in rough agreement with that of the observed oscillations, and $1.6M_{\odot}$ is the lower mass limit for a star to allow the stochastically excited oscillations penetrating out on the stellar surface as the observed oscillations.